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Elektronische Bauelemente

SPW31002S

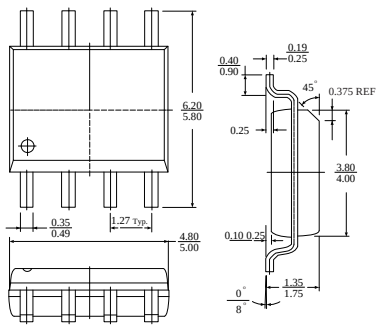
Bipolar Tone Ringer ICs

RoHS Compliant Product

Description

The SPW31002S is a bipolar integrated circuit.
It is designed for telephone bell replacment.

SOP-8



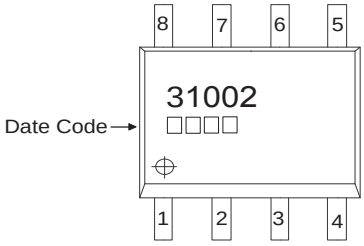
Dimensions in millimeters

Features

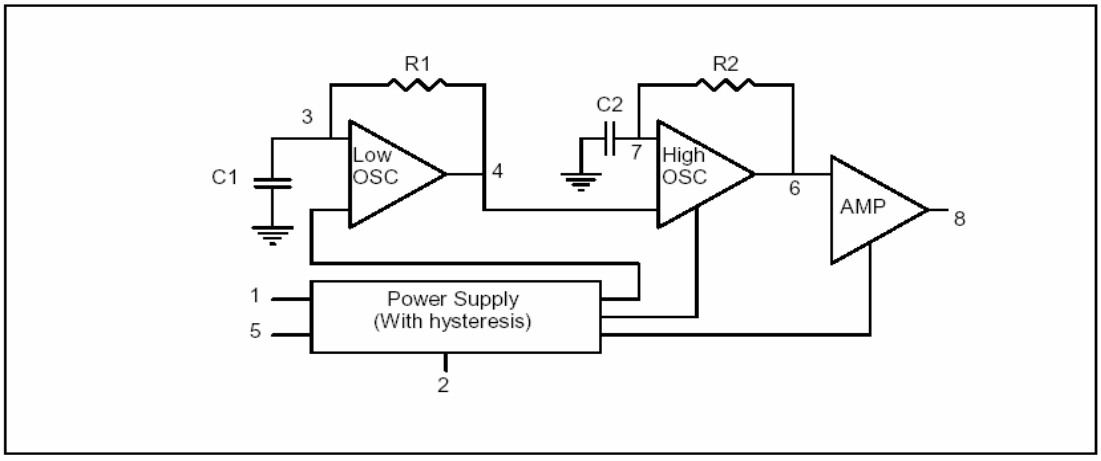
* Package Is Compact (SOP-8 pin)
* Oscillation Frequency Is Variable
* Current Consumption Is Small
* Few External Components
* Built-in Threshold Circuits Prevent False Triggering Due To Power Noise As Well As 'Chirps' Due To Rotary Dial

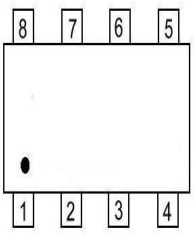
Appliactions

* Telecom Tone Ringer Set



Pin Configuration & Block Diagram





Pin1 : Vcc	Pin5 : Gnd
Pin2 : RSL Trigger In	Pin6 : High Freq. Time Constant.
Pin3 : Low Freq. Time Constant.	Pin7 : High Freq. Time Constant.
Pin4 : Low Freq. Time Constant.	Pin8 : Output

Absolute Maximum Ratings at Ta = 25℃

Characteristics	Symbol	Rating	Unit
Operating temperature	Topr	-40 ~ 85	℃
Storage Temperature range	Tstg	-55 ~ 150	℃
Supply Voltage	Vcc	30	V
Power Dissipation	Pd	500	mW

Electrical Characteristics (0℃≤TA≤70℃,Vcc=5V unless otherwise specified)

Characteristics		Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Voltage		Vopr		-	-	30	V
Initiation Supply Voltage		Vsi	(Note 1)	17	19	21	V
Sustaining Supply Voltage		Vsus	(Note 2)	10.5	12	-	V
Initiation Current Consumption		Isi	No load	1.4	3.3	4.2	mA
Sustaining Current Consumption		Isus		0.4	1.4	2.0	mA
Oscillator Frequency		fL	C1=0.47uF, R1=165kΩ	9	10	11	Hz
		fH1	C1=6800pF, R2=191kΩ	461	512	563	
		fH2		576	640	703	
Output Voltage	"H" Level	VOH	Vce = 24V, IOH=-10mA Pin7=Gnd	20	21.5	22.5	V
	"L" Level	VOL	Vce = 24V, IOH=-10mA Pin7=7V	0.7	1.0	2.0	V

Note 1.Initiation Supply Voltage (Vsi) is a supply voltage required to start oscillation of the tone ringer.

Note 2.Sustaining Supply Voltage (Vsus) is a supply voltage required to maintain oscillation of the tone ringer.

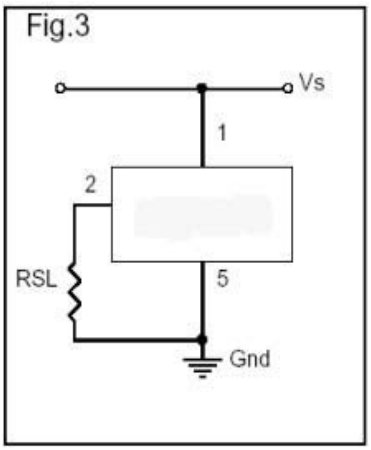
Note 3.Oscillation frequency is determined by the following equations (1), (2) and (3) :

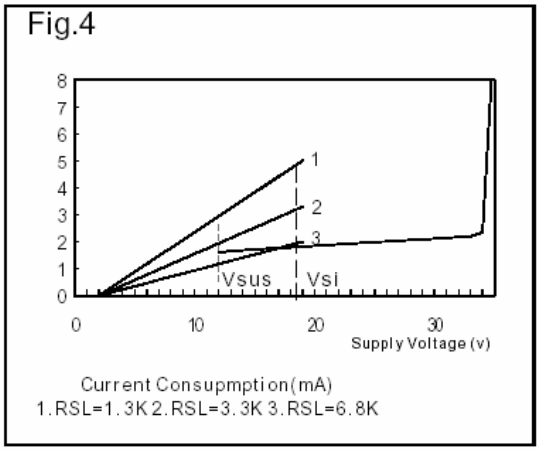
(1) fL = 1/1.234, R1, C1 (Hz) (2) fH1=1/1.515, R2, C2 (Hz) (3) fH2=1.24 fH1 (Hz)

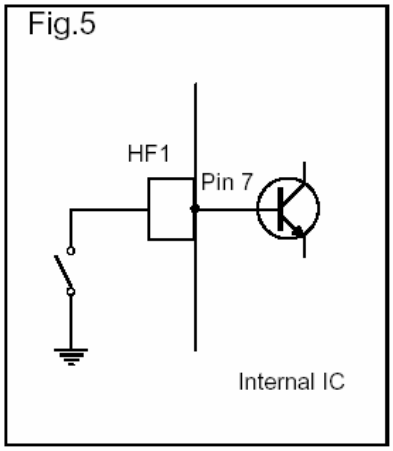
Method of Using Rsl

In the SPW31002S, using the RSL terminal can change the initiation supply current (Isi). The resistor RSL is connected to Gnd from Pin 2 as show in Fig. 3.

Further, the initiation supply current (Isi) can be changing the value of RSL. Fig. 4 shows the graph of Vs-Is characteristic at the time when RSL has been changed to three values. The Vs-Is characteristic at the time when RSL=6.8 kΩ coincides with that at the time when Pin2 of the SPW31002S has been used at an open state. If Pin 7 is connected to Gnd as shown in Fig. 5, the SPW31002S can stop oscillation. (the "L" level voltage is under 2V)

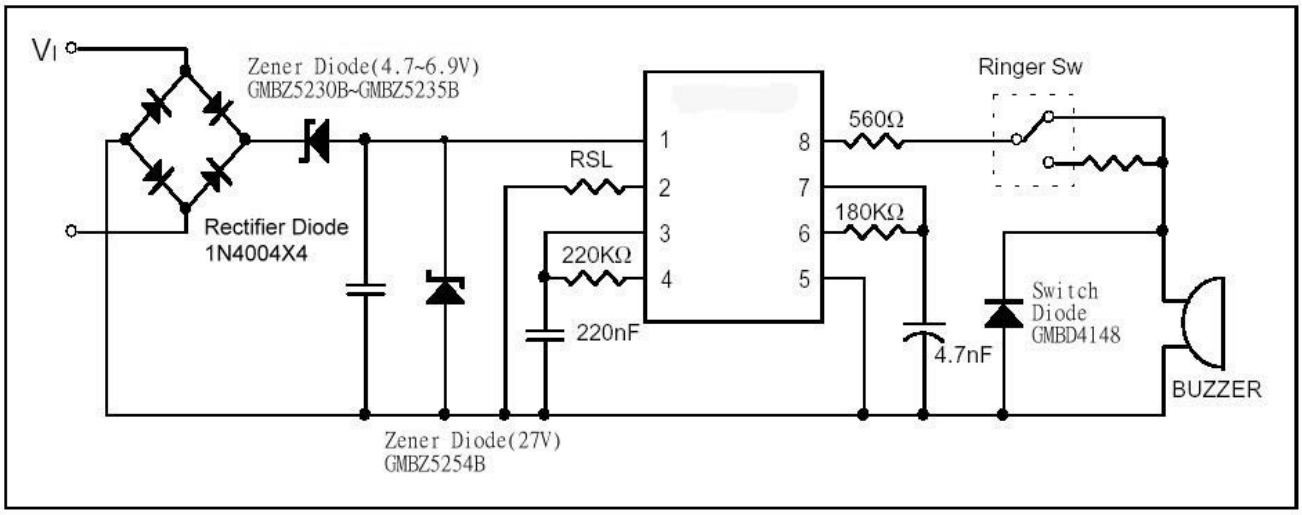






Application Information

Application circuits of Telecom Tone Ringer Set



Example of Output Circuit